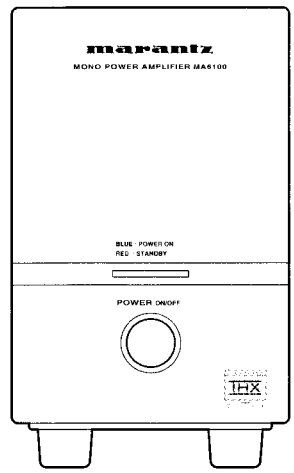
Service Manual

MA6100 /N1G, /U1G
/N1B, /U1B
Mono Power Amplifier

MARA -00735



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Please use this service manual with referring to the user guide (D.F.U.) without fail.
修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

MA6100

735

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Printed in Japan

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営業本部 〒150-0022
東京都渋谷区恵比寿南1-11-9

KOREA

MK ENTERPRISES LTD.
ROOM 604/605, ELECTRO-OFFICETEL, 16-58,
3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

Rated power output
(20 Hz to 20 kHz, 8 Ω load) ..... 125 W
Total harmonic distortion
(20 Hz to 20 kHz, 8 Ω load) ..... 0.02 %
Output bandwidth (8 Ω load, 0.04 %) ..... 10 Hz to 50 kHz
Frequency response ..... 10 Hz to 70 kHz, +0 / -1 dB
Damping factor (8 Ω load, 1 kHz) 60

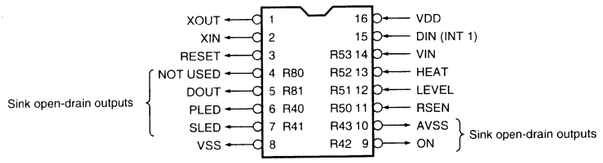
S/N (IHF A network, input shorted) ..... 110 dB

Supply voltage [/N] ..... 230 V AC, 50 Hz
[/U] ..... 120 V AC, 60 Hz
Power consumption [/N] ..... 200 W
(Stand-by) 1 W
[/U] ..... 230 W
(Stand-by) 2.5 W
Dimensions
Width ..... 88 mm
Height ..... 146 mm
Depth ..... 470 mm
Weight ..... 5.7 kg

Design and specifications are subject to change without notice.

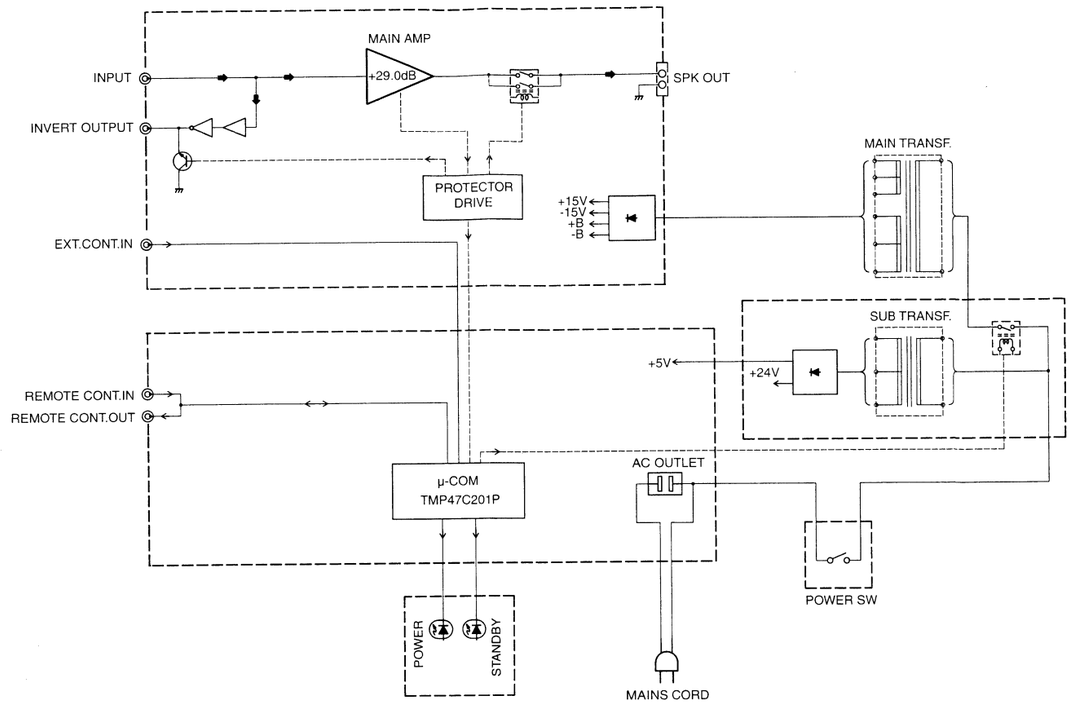
2.IC DATA

QY01 : TMP47C201P



Port	Pins	Name	In/Out	Active	Description
R80	4		Input		Not used
R81	5	DOUT	Output		Data output from RC5.
R82	15	DIN	Input	L	Data input to RC5.
R40	6	PLED	Output	L	Power LED.
R41	7	SLED	Output	L	Stand-by LED.
R42	9	ON	Output	L/H	Power amplifier OFF/ON
R43	10	AVSS	Output	L/H	Power amp supply voltage control. Low/High voltage.
R50	11	RSEN	Input	H/L	Power amp output muting status detection input. OFF/ON.
R51	12	LEVEL	Input	L/H	Power amp output level detection input. High/Low power.
R52	13	HEAT	Input	L/H	Heat sink overheating detection input. Overheat/Normal.
R53	14	VIN	Input	L/H	Video and DC signal detection input. Detected/Not detected.

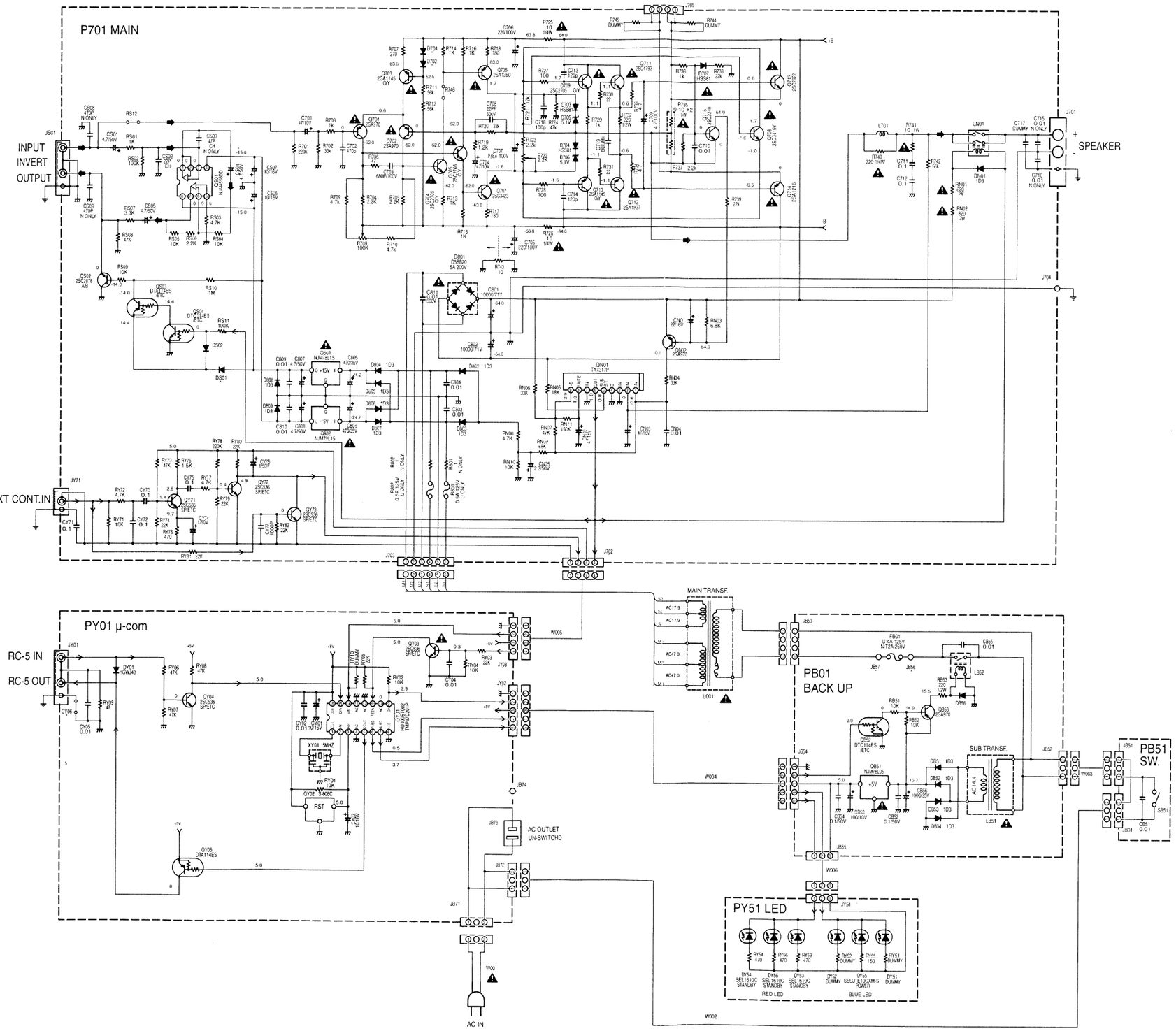
3. BLOCK DIAGRAM



4. TEST EQUIPMENT REQURED FOR SERVICING

Item 項　　目	Use 使　用　方　法
Distortion Analyzer 歪率計	Distortion measurements 歪の測定
Audio Oscillator 低周波発振器	Sinewave and squarewave signal source 正弦波及び矩形波の信号源
AC VTVM AC VTVM	Voltage measurements (AC) 交流電圧の測定
Oscilloscope オシロスコープ	Waveform analysis and trouble shooting and ASO alignment 波計分析、トラブルシューティング及びASOの調整
DC VTVM DC VTVM	Voltage measurements (DC) 直流電圧の測定
AC Wattmeter 交流ワットメーター	Monitors primary power to amplifier アンプの一次側消費電力のモニター
Line Voltmeter 電源電圧計	Monitors poterntial of primary power to amplifier アンプの一次側消費電圧のモニター
Vanable Autotransformer スライダック	Adjust level of primary power to amplifier アンプの一次側電圧の調節
Circuit Tester テスター	Trouble shooting トラブルシューティング
Shorting Plug ショート用プラグ	Shorts amplifier input to eliminate noise pickup 雑音を拾わないようにアンプ入力を短絡する

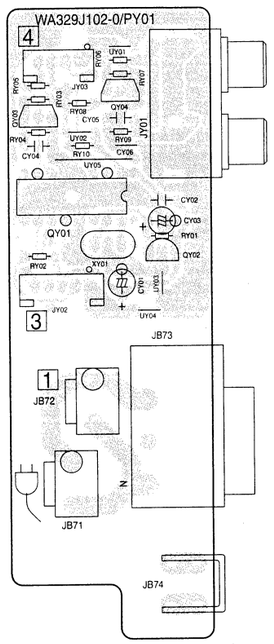
5. SCHEMATIC DIAGRAM AND PARTS LOCATION (Pattern Side)



PY01

QY03 QY04

QY01 QY02



P701

Q802 Q803

Q714

Q701 Q702

Q705 Q707 Q704 Q704 Q703 Q715 QN02

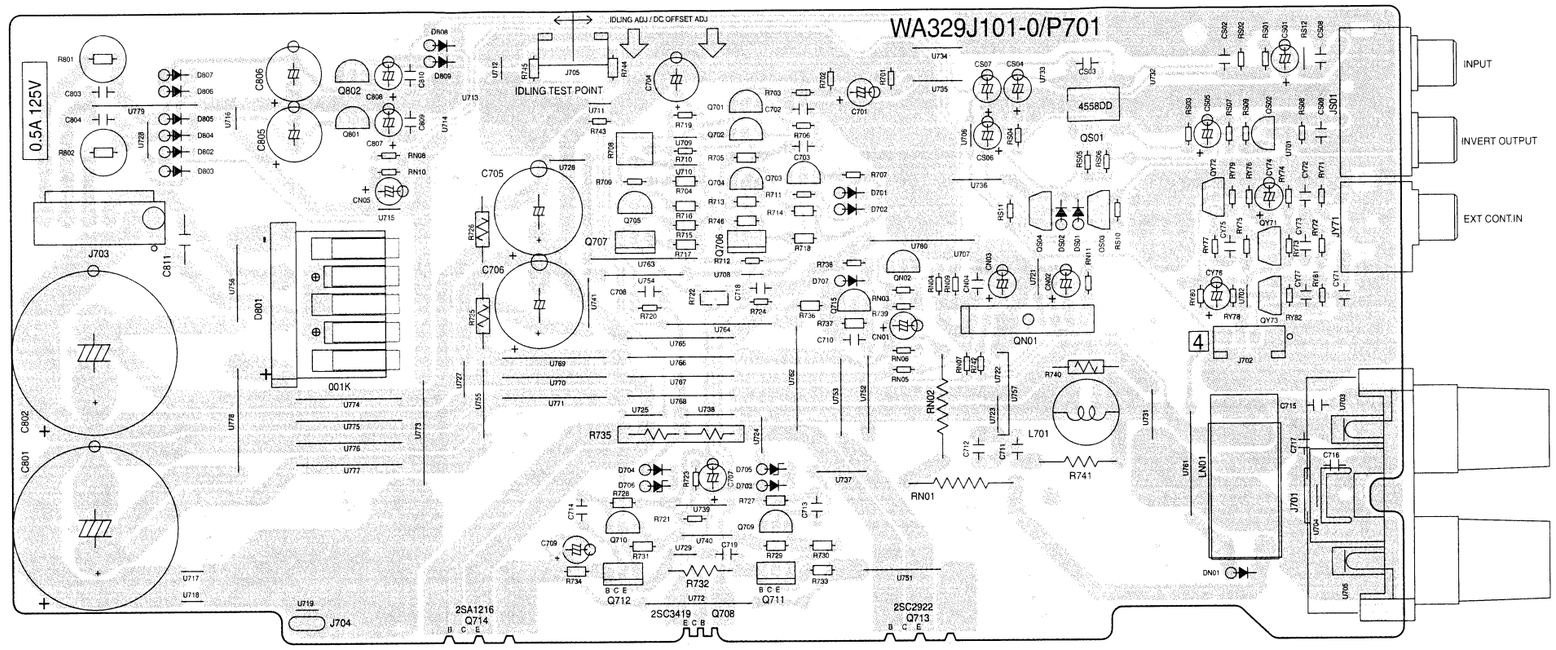
Q710 Q712 Q708 Q709 Q711 Q713

QS01

QN01QS04 QS03

QS02

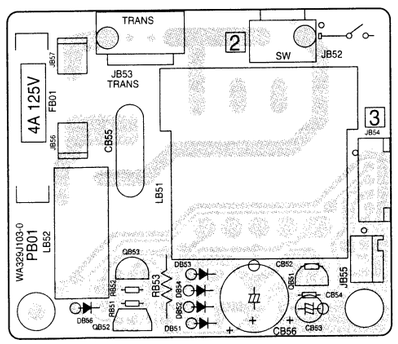
QY72 QY71 QY73



PB01

QB53 QB51

QB52



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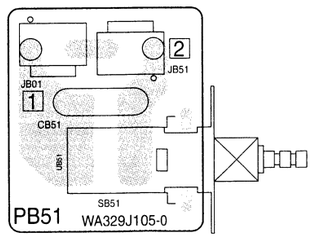

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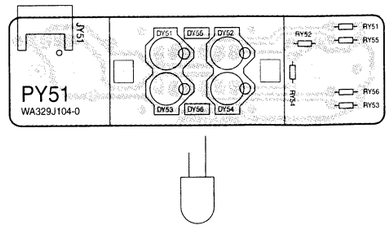
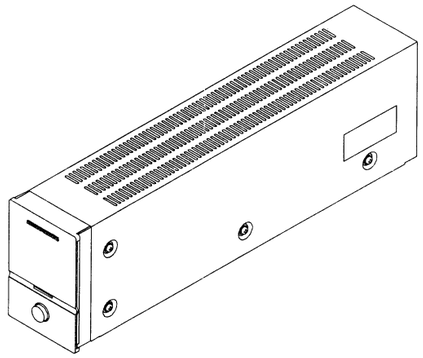
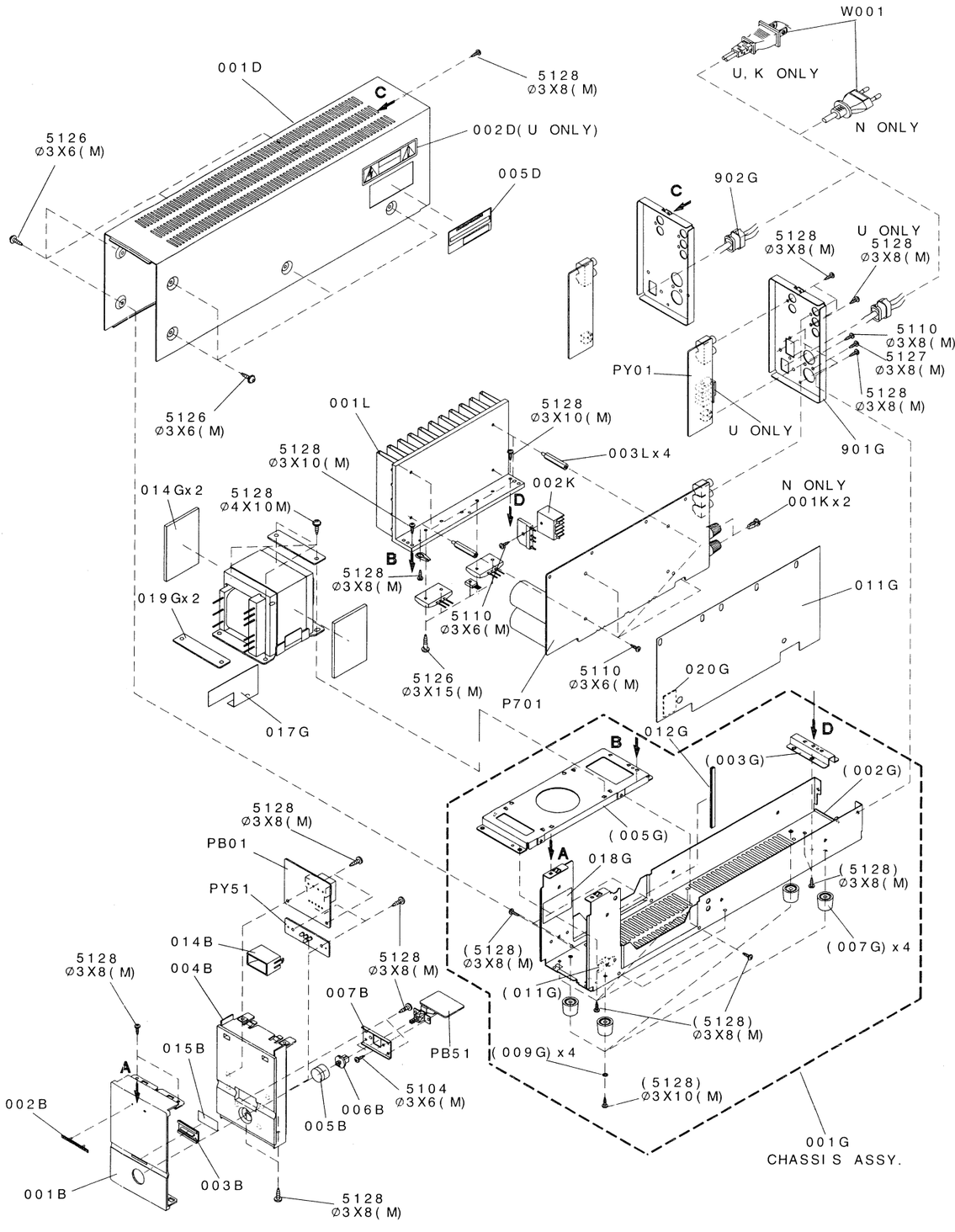


6. EXPLODED VIEW AND PARTS LIST

SYMBOL	STYLE	PARTS NAME
5104	⊛	+F. H. M. SCREW
5110	⊛	+B. H. M. SCREW
5126	⊛	+B. H. TAP TI TE SCREW W/WASHER
5128	⊛	+B. H. TAP TI TE SCREW(B TYPE)

MARK	MATERI AL/ FINISH
(M)	IRON/COPPER





POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
001B	BLACK	9965 000 05897	FRONT AL PANEL BLACK	329J248010
001B	GOLD	9965 000 05902	FRONT AL PANEL GOLD	329J248110
002B		9965 000 05898	BADGE MARANTZ	354H251240
003B		9965 000 05899	LENS FOR POWER ON/STANDBY	329J355010
004B	BLACK	9965 000 05900	CHASSIS FRONT MOLD BL	329J105010
004B	GOLD	9965 000 05903	CHASSISF RONT MOLD GL	329J105110
005B	BLACK	9965 000 01975	BUTTON POWER BL	255W270010
005B	GOLD	9965 000 01395	BUTTON POWER GL	255W270110
006B		9965 000 01394	JOINT FOR POWER BUTTON	312J125010
014B			REFLECTOR FOR P.ON/STAN.	329J274010
007G		4822 462 42026	LEG	176J057010
902G		4822 532 60948	BUSHING MAINS CORD	450H259010
⚠ L001	/N	9965 000 05887	MAINS TRANSF. 230V 50Hz	TS18631020
⚠ L001	/U		MAINS TRANSF. 120V 60Hz	TS18631010
⚠ W001	/N	4822 321 11343	MAINS CORD N MAYOR / JB71	YC01800790
⚠ W001	/U		MAINS CORD UL/CSA	YC02000880
			PACKING	
001T	/N	9965 000 05901	USER GUIDE	329J851310
001T	/U		USER GUIDE	329J851250
Z001		4822 321 62012	RCA PIN CORD ORANGE	ZD00900100
			NOT STANDARD SPARE PARTS	
001S			PACKING CASE	329J801010
002S			CUSHION FRONT	329J809010
003S			CUSHION REAR	329J809020

7. POWER AMP. ALIGNMENT

7.1 DC offset Adjustment

Speaker out:non Load

Step	Power	Adjust. Point	Test Point	Adjustment Vaule
1	On	R708	Speaker Output Terminal	≦20mV

Note:If the value that measured is not exceed +-20mV,no need adjust the DC offset.

7.2 Iding current Adjustment

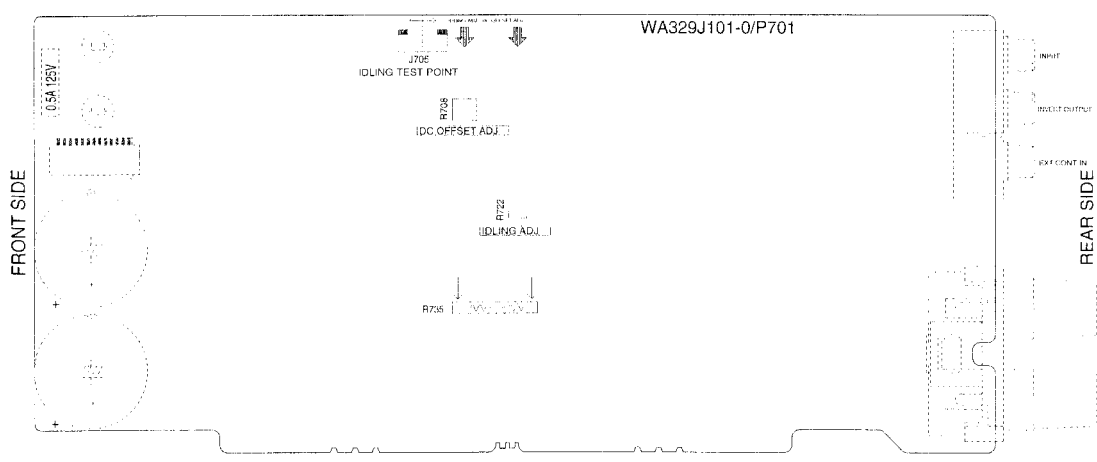
Speaker out:non Load

Step	Power	Adjust. Point	Test Point	Adjustment Vaule
1	Power on	R722	J705 or R735	within 1 minute 0.6mV
2	after 4 minutes	R722	J705:4P Connecter (between 1p-4p) or R735:Emitter Resister (0.1ohms x2)	see table for adjustment vaule

Time since power on	Idling current adjust.	Time since power on	Idling current adjust.
4m–4m30s	4.6mV	11m-12m	4.9mV
4m30s–5m	4.8mV	12m-14m	4.8mV
5m–5m30s	5.0mV	14m-16m	4.6mV
5m30s–6m	5.1mV	16m-18m	4.5mV
6m–7m	5.2mV	18m-22m	4.4mV
7m-8m	5.2mV	22m-26m	4.3mV
8m-9m	5.2mV	26m-30m	4.2mV
9m-10m	5.1mV	More than 40m	4.0mV
10m-11m	5.0mV		The taget is 4.0mV

m : minutes

s : seconds



8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05×××140, Carbon film fixed resistor, ±5% 1/4W
R***: 2) GD05×××160, Carbon film fixed resistor, ±5% 1/6W
① —— Resistance value

Examples ;
① Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.
3) DD1××××370, Ceramic capacitor
② ③ Disc type
Temp.coeff.P350 ~N1000, 50V
③ —— Capacity value
② —— Tolerance

Examples ;
② Tolerance (Capacity deviation)
±0.25 pF 0
±0.5 pF 1
±5% 5
* Tolerance of COMMON PARTS handled here are as follows :
0.5 pF ~ 5 pF .... ±0.25 pF
6 pF ~ 10 pF .... ±0.5 pF
12 pF ~ 560 pF .... ±5%
③ Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C*** : CERAMIC CAP.
4) DK16××× 300, High dielectric constant ceramic capacitor
④ Disc type
Temp.chara. 2B4, 50V
④ —— Capacity value

Examples ;
④ Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C*** : 5) ELECTROLY CAP. (⏚), 6) FILM CAP. (⏦)
5) EA×××××× 10, Electrolytic capacitor
⑤ ⑥ One-way lead type, Tolerance ±20%
⑥ —— Working voltage
⑤ —— Capacity value

Examples ;
⑤ Capacity value

0.1 µF 104	4.7 µF 475	100 µF 107
0.33 µF 334	10 µF 106	330 µF 337
1 µF 105	22 µF 226	1100 µF 118
		2200 µF 228

⑥ Working voltage

6.3V 006	25V 025
10V 010	35V 035
16V 016	50V 050

6) DF15××× 350 → Plastic film capacitor
DF15××× 310 → One-way type, Mylar ±5% 50V
DF16××× 310 → Plastic film capacitor
⑦ One-way type, Mylar ±10% 50V
⑦ —— Capacity value

Examples ;
⑦ Capacity value

0.001 µF (1000 pF) 102	0.1 µF 104
0.0018 µF 182	0.56 µF 564
0.01 µF 103	1 µF 105
0.015 µF 153	

NOTE : 1) The above CODES (R***, R***, C***, C*** and C ***) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed the common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts (**RI05**, **DD4**, **DK4**).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;
1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05××× 140	RF25S×××× ΩJ	(±5% 1/4W)
NH05××× 120	RF50S×××× ΩJ	(±5% 1/2W)
NH85××× 110	RF73B2A×××× ΩJ	(±5% 1/10W)
NH95××× 140	RF73B2E×××× ΩJ	(±5% 1/4W)

* Resistance value — Resistance value (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05××× 140	ERD-2FCJ×××	(±5% 1/4W)
RF05××× 140		
NF02××× 140	ERD-2FCG×××	(±2% 1/4W)
RF02××× 140		

* Resistance value — * Resistance value

Examples ;
* Resistance value

0.1 Ω 001	10 Ω 100	1 kΩ 102	100 kΩ 104
0.5 Ω 005	18 Ω 180	2.7 kΩ 272	680 kΩ 684
1 Ω 010	100 Ω 101	10 kΩ 103	1 MΩ 105
6.8 Ω 068	390 Ω 391	22 kΩ 223	4.7 MΩ 475

ABBREVIATION AND MARKS

ANT.	: ANTENNA	BATT.	: BATTERY
CAP.	: CAPACITOR	CER.	: CERAMIC
CONN.	: CONNECTING	DIG.	: DIGITAL
HP	: HEADPHONE	MIC.	: MICROPHONE
µ-PRO	: MICROPROCESSOR	REC.	: RECORDING
RES.	: RESISTOR	SPK	: SPEAKER
SW	: SWITCH	TRANSF.	: TRANSFORMER
TRIM.	: TRIMMING	TRS.	: TRAMSISTOR
VAR.	: VARIABLE	X'TAL	: CRYSTAL

NOTE ON SAFETY :

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			P701-MAIN/POWER SUPPLY CIRCUIT BOARD	
			P701-CAPACITORS	
CN01		4822 124 90358	ELECT. 22µF M 16V RA-2	OA22601620
CN02		4822 124 41539	ELECT. 47µF M 16V RA-2	OA47601620
CN03		4822 124 41539	ELECT. 47µF M 16V RA-2	OA47601620
CN04		4822 122 30043	CER. 0.01µF Z 50V	DK18103310
CN05		4822 124 90357	ELECT. 2.2µF M 50V RA-2	OA22505020
CN06	/N	4822 122 30043	CER. 0.01µF Z 50V	DK18103310
CS01		4822 124 22274	ELECT. 4.7µF M 50V RA-2	OA47505020
CS02		5322 122 32143	CER. 22pF J CH 50V BLK	DD15220300
CS03	/N	4822 122 31205	CER. 47pF J CH 50V BLK	DD15470300
CS04		4822 124 22274	ELECT. 4.7µF M 50V RA-2	OA47505020
CS05		4822 124 22274	ELECT. 4.7µF M 50V RA-2	OA47505020
CS06		4822 124 90352	ELECT. 10µF M 16V RA-2	OA10601620
CS07		4822 124 90352	ELECT. 10µF M 16V RA-2	OA10601620
CY71		4822 122 40617	CER. 0.1µF +80 -20% 50V DC	DD38104010
CY74		4822 124 41543	ELECT. 1µF M 50V RA-2	OA10505020
CY76		4822 124 41543	ELECT. 1µF M 50V RA-2	OA10505020
C701		4822 124 22275	ELECT. 47µF M 10V RA-2	OA47601020
C702			FILM 470pF TP 100V	OF15471540
C703		4822 121 42341	FILM 680pF 100V ECQ-P	DF15681550
C704		4822 124 22275	ELECT. 47µF M 10V RA-2	OA47601020
C705		9965 000 02644	ELECT. 220µF M 100V RA-2	OA22710020
C706		9965 000 02644	ELECT. 220µF M 100V RA-2	OA22710020
C707		4822 124 11533	ELECT. 1µF100V RA-2	OA10510020
C708		9965 000 01586	MICA 22pF J 500V FE	DF35220520
C709		9965 000 05892	ELECT. 4.7µF 100V	EA47510010
C713		9965 000 00438	FILM 120pF J 100V APSV	OF15121540
C714		9965 000 00438	FILM 120pF J 100V APSV	OF15121540
C715	/N	4822 122 40306	CER. 0.047µF Z 50V	DK18473310
C716	/N	4822 122 30043	CER. 0.01µF Z 50V	DK18103310
C718		9965 000 01344	FILM 100pF J 100V APSV	OF15101540
⚠ C801			ELECT. 10000µF M 71V	EB10907170
⚠ C802			ELECT. 10000µF M 71V	EB10907170
C803		4822 122 30043	CER. 0.01µF Z 50V	DK18103310
C804		4822 122 30043	CER. 0.01µF Z 50V	DK18103310
C805		4822 124 41541	ELECT. 470µF M 35V RA-2	OA47703520
C806		4822 124 41541	ELECT. 470µF M 35V RA-2	OA47703520
C807		4822 124 22274	ELECT. 4.7µF M 50V RA-2	OA47505020
C808		4822 124 22274	ELECT. 4.7µF M 50V RA-2	OA47505020
C809		4822 122 30043	CER. 0.01µF Z 50V	DK18103310
C810		4822 122 30043	CER. 0.01µF Z 50V	DK18103310
C811		4822 126 12453	CER. 0.01µF Z E 500V	DK18103560
C812	/N	4822 122 30043	CER. 0.01µF Z 50V	DK18103310
			P701-CAPACITORS (COMMON)	
C***			HIGH DIELECTRIC CONSTANT CER. CAPACITOR ±10% 50V : CS08 CS09 CY77	
C***			PLASTIC FILM CAPACITOR ±5% 50V : C710-C713 CY72-CY75	
			P701-RESISTORS	
⚠ RN01		4822 053 11821	820Ω ±5%2W	GA05821020
⚠ RN02		4822 053 11821	820Ω ±5%2W	GA05821020
RS12			JUMPER	75060501P0
⚠ R704		4822 050 22202	2.2kΩ ±5% 1/6W	GG05222160
⚠ R705		4822 050 22202	2.2kΩ ± 5% 1/6W	GG05222160
R708		9965 000 01766	TRIM. 100kΩ	RA01040760
⚠ R713		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R714		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R715		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R716		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R717			180Ω ±5% 1/6W	GG05181160
⚠ R718			180Ω ±5% 1/6W	GG05181160
R722		9965 000 01566	TRIM. 2.2kΩ	RA02220760
⚠ R725		4822 052 10109	10Ω ±5% 1/4W	GG05100140

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
⚠ R726		4822 052 10109	10Ω ±5% 1/4W	GG05100140
⚠ R727		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠ R728		4822 052 10101	100Ω ±5% 1/6W	GG05101160
⚠ R729		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R730		4822 052 10229	22Ω ±5% 1/6W	GG05220160
⚠ R731		4822 052 10229	22Ω ±5% 1/6W	GG05220160
⚠ R732		4822 116 60319	FUSIBLE 220Ω J 1/2W	NH05221120
⚠ R733		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
⚠ R734		4822 052 10478	4.7Ω ±5% 1/6W	GG05047160
⚠ R735		4822 111 91422	COMPO. 0.1Ω K 5W X 2	BW10000050
⚠ R736		4822 052 10102	1kΩ ±5% 1/6W	GG05102160
⚠ R737		4822 050 22202	2.2kΩ ±5% 1/6W	GG05222160
⚠ R740		4822 116 83929	220Ω ±5% 1/4W	GG05221140
⚠ R741		4822 053 10109	10Ω ±5%1W	GA05100010
R746			JUMPER	75060501P0
⚠ R801	/N	4822 116 82805	1Ω ±5% 1/6W	GG05010160
⚠ R801	/U		FUSE 0.5A 125V UL/CSA	FS20050220
⚠ R802	/N	4822 116 82805	1Ω ±5% 1/6W	GG05010160
⚠ R802	/U		FUSE 0.5A 125V UL/CSA	FS20050220
			P701-RESISTORS (COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : R701-R703 R706 R707 R709-R712 R719-R724 R738 R739 R742 R743 RN03-R/N1 RS01-RS11 RY71-RY82	
			P701-SEMICONDUCTORS	
DN01		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DS01		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
DS02		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D701		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D702		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
D703		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
D704		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
D705		4822 130 80317	ZENER DIODE 5.1V	HD30511000
D706		4822 130 80317	ZENER DIODE 5.1V	HD30511000
D707		4822 130 80837	DIODE HSS81TD 150V 150mA	HD20027010
⚠ D801		4822 130 83438	DIODE D5SB-20 200V	HE20016290
D802 ∫ D809		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
⚠ K701			TRS. KIT 2SA1360 2SC3423 PAIR O OR Y	HK1360 19C0
⚠ K702			TRS. KIT 2SA1837 2SC4793 HFE MJI RANK	HK1837 19C0
⚠ K703		4822 130 11394	TRS. KIT 2SA1216 2SC2922 PAIR O OR Y	HK1216 19F0
QN01		4822 209 83312	IC TA7317P	HC10042050
QN02		4822 130 42949	TRS. 2SA970 GR OR BL	HT10970 2A0
QS01		4822 209 83631	IC NJM4558D-D	HC10008090
QS02		4822 130 43818	TRS. 2SC2878 A OR BRANK	HT32878 2A0
QS03		4822 130 61227	DIG.TRS. DTA114ES UN4111 10K 10K	BA10001000
QS04		4822 130 60588	DIG.TRS. DTC114ES UN4211 10K 10K	BA20001000
QY71 ∫ QY73		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000
Q701		4822 130 42949	TRS. 2SA970 GR OR BL	HT10970 2A0
Q702		4822 130 42949	TRS. 2SA970 GR OR BL	HT10970 2A0
Q703		4822 130 42999	TRS. 2SA1145 O OR Y	HT11145 2A0
Q704		4822 130 43283	TRS. 2SC2705 O OR Y	HT32705 2A0

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
Q705		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0
⚠ Q706		5322 130 61728	TRS. 2SA1360 O OR Y	HT113602A0
⚠ Q707		5322 130 61737	TRS. 2SC3423 O OR Y	HT334232A0
Q708		4822 130 60117	TRS. 2SC3419 Y 40V 0.8A PC=1.2W 5W	HT334191Y0
Q709		4822 130 43283	TRS. 2SC2705 O OR Y	HT327052A0
Q710		4822 130 42999	TRS. 2SA1145 O OR Y	HT111452A0
⚠ Q711		4822 130 63635	TRS. 2SC4793 O Y	HT347932A0
⚠ Q712		4822 130 63634	TRS. 2SA1837 O Y	HT118372A0
⚠ Q713		9965 000 01762	TRS. 2SC2922 O Y	HT329222A0
⚠ Q714		9965 000 01763	TRS. 2SA1216 O Y	HT112162A0
Q715		4822 130 43233	TRS. 2SC2240 GR OR BL	HT322402A0
⚠ Q801		4822 209 71038	IC NJM78L15A +15V 0.1A	HC38115090
⚠ Q802		4822 209 71039	IC NJM79L15A -15V 500MW	HC39115090
			P701-MISCELLANEOUS	
JS01		9965 000 01315	TERMINAL 2P RCA JACK BLK/BLK GOLD 1L2	YT02021550
JY71		9965 000 05815	TERMINAL 1P RCA PIN JACK YELLOW	YT02010560
J701		4822 290 81596	TERMINAL SPK. BROWN/RED	YT01020190
LN01		9965 000 05895	RELAY G5PA-28 5A 250VAC	LY20240490
L701		4822 157 70022	SPK CHOCK COIL VERTICAL	ML08010030
			PB01-SUB TRANSF. CIRCUIT BOARD PB01-CAPACITORS	
CB52		4822 126 11558	CER. 0.01μF Z 50V	DA17104110
CB53		4822 124 90353	ELECT. 100μF M 10V RA-2	OA10701020
CB54		4822 126 11558	CER. 0.01μF Z 50V	DA17104110
CB55			CER. 0.01μF 250V	DK17103860
CB56		4822 124 90356	ELECT. 1000μF M 35V RA-2	OA10803520
			PB01-RESISTORS	
RB51			10kΩ ±5% 1/6W	GD05103160
RB52			10kΩ ±5% 1/6W	GD05103160
⚠ RB53		4822 050 22201	220Ω ±5% 1/2W	GG05221120
			PB01-SEMICONDUCTORS	
DB51 ∫ DB54		4822 130 82421	DIODE 1D3 1A 200V	HD20002710
DB56		4822 130 32362	DIODE 1SS176 MA165 1SS254 30V 0.1A	HD20002000
⚠ QB51		4822 209 71373	IC NJM78L05A	HC38105090
QB52		4822 130 60588	DIG.TRS. DTC114ES UN4211 10K 10K	BA20001000
QB53		4822 130 42949	TRS. 2SA970 GR OR BL	HT109702A0
			PB01-MISCELLANEOUS	
⚠ FB01	/N	4822 070 32001	FUSE 2 A 250V BS LISTED	FS10200850
⚠ FB01	/U		FUSE 4A 125V UL CSA MITI TYPE FBT	FS10400350
⚠ LB51	/N	9965 000 05888	BACK UP 230V 50Hz	TS12812020
⚠ LB51	/U		BACK UP 120V 60Hz	TS12812010
⚠ LB52		9965 000 00681	RELAY POWER G5PA-1 5A	LY10120400
			PB51-SWITCH CIRCUIT BOARD	
CB51			CER. 0.01μF 250V	DK17103860
⚠ SB51		9965 000 01777	PUSH SWITCH SDDLB1-B1-D2 TV-5	SP01012460
			PY01-μ-COM CIRCUIT BOARD PY01-CAPACITORS	
CY01		4822 124 90352	ELECT. 10μF M 16V RA-2	OA10601620
CY02		4822 122 30043	CER. 0.01μF Z 50V	DK18103310
CY03		4822 124 90352	ELECT. 10μF M 16V RA-2	OA10601620
CY04		4822 122 30043	CER. 0.01μF Z 50V	DK18103310
CY05		4822 122 30043	CER. 0.01μF Z 50V	DK18103310
CY06			JUMPER	75060501P0
			PY01-RESISTORS (COMMON)	
R***			CARBON FILM FIXED RES. ±5% 1/6W : RY01-RY09	
			PY01-SEMICONDUCTORS	
DY01		4822 130 81247	DIODE 1GWJ43	HD20031050
QY01		4822 209 15768	MICROPROCESSOR TMP47C201P	HU400ST000
QY02		4822 209 14883	IC V-SENSOR IC S-806C 4.55V	HC10075530
QY03		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000
QY04		4822 130 41947	TRS. 2SC2458 2SC1740S 2SC3199 ETC.	HT30001000
QY05		4822 130 42682	DIG.TRS. DTA144ES UN4113 47K 47K	BA10002000
			PY01-MISCELLANEOUS	
⚠ JB73	/U	4822 267 31686	JACK AC OUTLET 1P	YJ04001780
JY01		9965 000 03413	TERMINAL 14X14 RA 1L2P ORG NI F-GROUND	YT02021640
XY01		4822 242 72592	SERAMIC VIB. CST 5.56MGW-TF01	FQ05564010
			PY51-LED CIRCUIT BOARD PY51-RESISTORS	
RY53			470Ω ±5% 1/6W	GD05471160
RY54			470Ω ±5% 1/6W	GD05471160
RY55			150Ω ±5% 1/6W	GD05151160
RY56			470Ω ±5% 1/6W	GD05471160
			PY51-SEMICONDUCTORS	
DY53		9965 000 05889	L.E.D. SEL1610C RED	HI10041080
DY54		9965 000 05889	L.E.D. SEL1610C RED	HI10041080
DY55		9965 000 05889	L.E.D. SEL/UE10CXM-S BLUE	HI10040080
DY56		9965 000 05889	L.E.D. SEL1610C RED	HI10041080